

INFORMATION SHEET – BEHAVIOURAL OPTOMETRY ASSESSMENT

What is a Behavioural Optometry?

Eyes are simply lenses that convey images to the brain. General optometry is very good at ensuring people receive the best images possible. However, vision is more than simply receiving clear images; it is also about making sense of those images and other elements of the brain and body are involved in this process in addition to the eyes.

Behavioural Optometry is the branch within general optometry that investigates how well vision is processed. It explores how the brain, eyes and body work together as a team to make sense of images. Just as important as the eyes are:

- Peripheral awareness;
- Hand-eye and body co-ordination;
- Depth perception;
- Speed perception;
- Hazard perception;
- Peripheral vision;
- Visual memory;
- Colour perception;
- Tracking.

What is a Behavioural Optometry Assessment?

A Behavioural Optometry Assessment (BOA) is nothing to do with a child's behaviour. It is an examination of how the eyes behave (i.e. work) independently and together.

Explanation of tests

Normally when someone visits an optometrist they are given an eye examination. By contrast, a BOA investigates skills and processes in the brain which is where what we see through our eyes is processed.

All the tests used during a BOA are designed to investigate the visual skills needed to read and undertake other visually directed tasks. The tests are age normed which means they compare someone's results against the average for their age. The results are typically given in the form of percentile rankings (by comparison with the normal range of results for people of their age). The higher the percentile ranking, the better the results compared with peers. The average for an age group is a percentile ranking of 50.

Tests

Visagraph III

The Visagraph III is the culmination of over 70 years of eye-movement recording and reading research. It is an objective measurement tool for evaluating reading efficiency (fluency). The reading characteristics that determine fluency are visual/functional proficiency, perceptual accuracy and information processing competence. These characteristics directly affect the ease and comfort with which people read and comprehend.

Through the use of infra-red sensors, an individual's oculo-motor activity is recorded as they silently read an age-appropriate text selection whilst wearing Visagraph III goggles. Following the reading, a brief series of questions tests the subject's comprehension of the passage.

Eye-movement characteristics are automatically analysed and a report is produced detailing how the individual reads.

As well as looking at the measures above, the Visagraph III also looks at specific visual skills, specifically eye movement control (eye tracking), binocularity (eye teaming) and fixation stability.

Measures of Visual Information Gathering

Convergence is the ability to direct both eyes to a single point. The near point of convergence (NPC) is measured using a Wolf Wand which consists of a metal rod with a shiny ball on the end of it. The person is asked to follow the ball in as it is slowly brought towards them, and to report when the ball becomes blurred (blur point) and also when they see it doubled (break point). The ball is then moved slowly away and the person is asked to report when the ball becomes single and in focus (recovery point).

Visual Perceptual Tests

Visual perception tests look at how someone interprets or processes what they see. They consist of two separate tests:

1. The **Word Sentence Copying Test (WSCT)** looks at how many words per minute a child can copy.
2. The **Visual Perception Test** tests the ability to process visual information.

Both tests are used to assess visual discrimination, visual memory and visual spatial relationships. They are very tightly age - normed within a three-month age band, in fact.

Visual symptoms

A BOA is recommended if, when you are reading or writing, the words ever:

- Become blurred, faded or disappear;
- Run together;
- Change size or jump around;
- Acquire faint colours around them;
- Appear to fall off the page;
- Are hidden by the background colour of the page;
- Are doubled.

Other symptoms to watch out for are if:

- You see a glare on white paper;
- Reading or writing sometimes causes tears, stinging, burning or soreness in your eyes.
- You need time for your eyes to clear when looking up from reading or desk work;
- The writing on a school board is unclear.

Visual Behaviour

Further clues to the need for a BOA are any of the following behaviours:

- Holding a book at arms' length;
- Regularly changing the viewing distance of printed material;
- Rubbing or screwing up your eyes whilst reading;
- Covering one eye to make the words clearer;
- Excessive blinking;
- Moving your head whilst reading;
- Using a finger or guide to follow the text;
- Reversing letters;
- Skipping letters, words or lines;
- Reading slowly;
- Tiring quickly;
- Having a low attention span;
- Being disruptive in class;
- Having poor general co-ordination;
- Having poor handwriting;
- Being sensitive to light;
- Having a poor memory of text read;
- Vocalising words when reading silently;
- Avoiding reading, or confining reading to comics or books with lots of pictures;
- Excessive fidgeting;
- Finding it difficult to follow a moving target.